2003

MANITOU

skareb

comp elite super

OWNER'S MANUAL

P/N 042098

answerproducts incorporated

28209 Avenue Stanford, Valencia, California 91355-3984 • 661 257 4411 • fax 661 294 4179

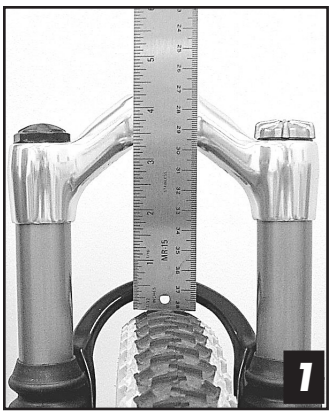
SERVICE PARTS KITS

SKAREB COMP COIL		
Compression Damping Assembly		85-4835
Rebound Damping Assembly		85-4876
Preload		85-4837
Crown/Steer Tube Assembly		85-5081
Sticker Kit		85-5164
Ride Kits -	Soft	85-5041
	Medium	85-5042
	Firm	85-5043
	X-Firm	85-5173
Knob Kit		85-5050

SKAREB ELITE		
Compression Damping Assembly		85-4835
Rebound Damping Assembly		85-4876
Preload		N/A
Crown/Steer Tube Assembly		85-5081
Sticker Kit		85-5164
Ride Kits -	X-Soft	85-4808
	Soft	85-4878
	Medium	85-4927
	Firm	85-9188
	X-Firm	85-5174
Knob Kit		85-5050

SKAREB SUPER		
Compression Damping Assembly		85-4856
Rebound Damping Assembly		85-4876
Preload		N/A
Crown/Steer Tube Assembly		85-5081
Sticker Kit		85-5164
Ride Kits -	X-Soft	85-4808
	Soft	85-4878
	Medium	85-4927
	Firm	85-9188
	X-Firm	85-5174
Knob Kit		85-5050

Outer Casting Assemblies	
Black	85-5100
Silver	85-5101
Red	85-5102
White	85-5103
Yellow	85-5104
Orange	85-5105
Blue	85-5106
Candy Red	85-5107
Candy Blue	85-5108
Candy Chrome	85-5109
Black N/B	85-5111
Silver N/B	85-5112
Red N/B	85-5113
White N/B	85-5114
Yellow N/B	85-5115
Orange N/B	85-5116
Blue N/B	85-5117
Candy Red N/B	85-5118
Candy Blue N/B	85-5119
Candy Chrome N/B	85-5120
* Lockout Assembly Will fit all SKAREB Forks	85-4869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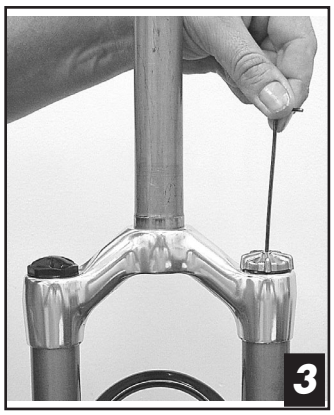
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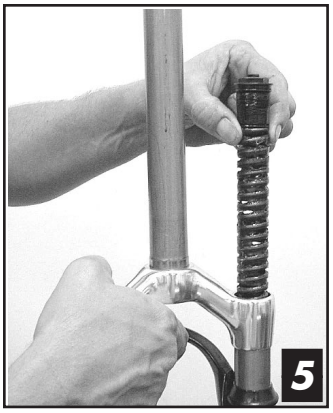
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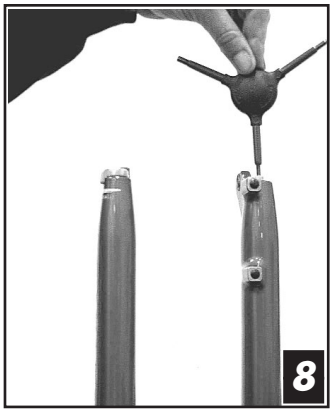
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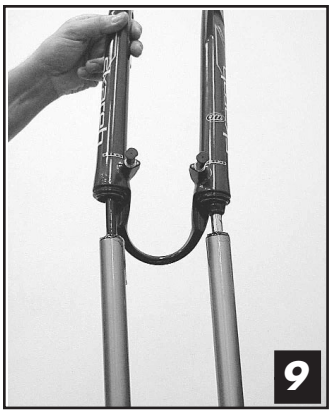
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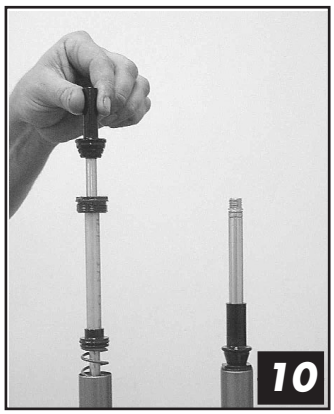
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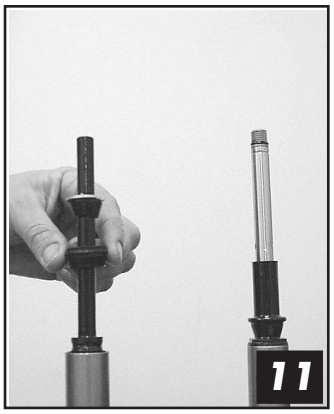
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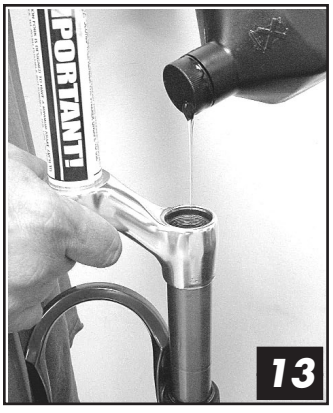
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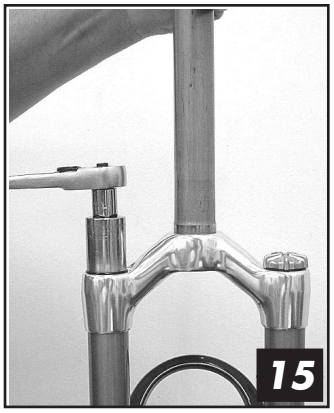
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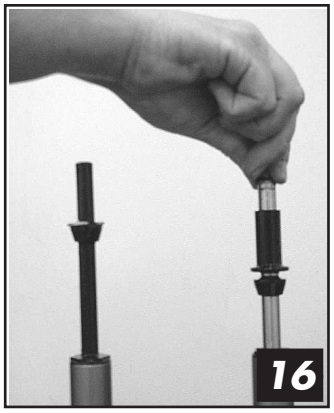
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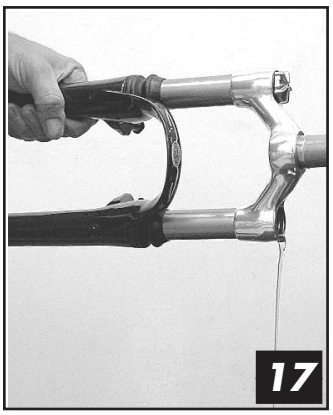
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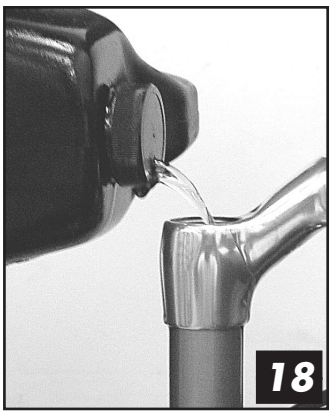
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AMERICAN MADE MANITOU SUSPENSION FORKS

CONGRATULATIONS ON CHOOSING THE LATEST IN SUSPENSION TECHNOLOGY AVAILABLE, A 2003 MANITOU SKAREB FORK BUILT IN THE USA. This SKAREB fork is fully assembled and is ready to be installed onto your bicycle. It comes equipped with a 1 1/8-inch threadless steerer tube, RA casting, and is available with a V-brake-style hangerless arch or a disc brake only version. A handlebar-mounted reflector must be used for on-road use, which is not included with your fork.

2003 SKAREB FORK LINE

SKAREB COMP COIL . . . . . 80 MM TRAVEL / COIL SPRING / FLUID FLOW DAMPING / SOLID CROWN / RA CASTING

SKAREB ELITE. . . . . 80 MM TRAVEL/ AIR-COIL SPRING / TPC DAMPING / HOLLOW CROWN / RA CASTING

SKAREB SUPER . . . . . 80 MM TRAVEL / AIR-COIL SPRING / LOCKOUT / TPC DAMPING / HOLLOW CROWN / RA CASTING

SKAREB DIVA . . . . . 80 MM TRAVEL / AIR COIL SPRING / LOCKOUT / TPC DAMPING / HOLLOW CROWN / RA CASTING

You can also download this manual at www.answerproducts.com.

⚠ GENERAL WARNING BICYCLING IS A HAZARDOUS ACTIVITY THAT REQUIRES THAT THE RIDER STAY IN CONTROL OF HIS OR HER BICYCLE AT ALL TIMES. READING THIS MANUAL ENTIRELY AND PROPERLY MAINTAINING YOUR BICYCLE, SUSPENSION FORK AND REAR SHOCK WILL REDUCE THE POSSIBILITY OF INJURY OR POSSIBLE DEATH. PRIOR TO RIDING YOUR BICYCLE, YOU SHOULD INSPECT YOUR SUSPENSION FORK TO ENSURE THAT NO DAMAGE HAS OCCURRED DURING THE COURSE OF RIDING. DO NOT RIDE YOUR BICYCLE IF THE FORK OR SHOCK SHOWS ANY SIGNS OF BENDING, CRACKING, LEAKING, OR IF IT IS MISSING ANY OF THE ORIGINALLY SUPPLIED COMPONENTS. ANY FALL FROM YOUR BICYCLE CAN RESULT IN SERIOUS INJURY OR EVEN DEATH. FOLLOWING THESE INSTRUCTIONS CAN HELP YOU REDUCE THE RISK OF BEING INJURED. IF YOU ARE A MODERATE OR AGGRESSIVE OFF-ROAD RIDER, OR RIDE AT LEAST THREE TIMES A WEEK OVER ROUGH TERRAIN, ANSWER RECOMMENDS RETURNING YOUR SUSPENSION FORK EVERY 2 YEARS FOR A THOROUGH INSPECTION AND UPDATE. TAKE YOUR FORK TO A MANITOU AUTHORIZED DEALER WHO CAN ARRANGE FOR SHIPMENT TO ANSWER PRODUCTS, OR YOU MAY CALL ANSWER AT (661) 257-4411 TO HAVE YOUR FORK SHIPPED DIRECTLY.

IMPORTANT: The SKAREB fork is an off-road fork, and as such, does not come with proper reflectors for on-road use.

CONSUMER SAFETY INFORMATION

1. Never remove or have the steerer tube or stanchions removed from the crown. The steerer tube and stanchions (inner legs) are press fit at the factory. Press fit inner legs have a higher performance versus bolt-in inner legs, but cannot be pressed out. Pressing them out will permanently damage the crown beyond repair and render it unsafe for any continued use.
2. Never attempt to thread a threadless steerer tube. Cutting threads will weaken the steerer tube and cause an unsafe condition. The only safe thing to do is to obtain the proper crown/steerer from your dealer, or contact Answer Warranty at (661) 257-4411.
3. Any other alteration or modification to your fork should be considered unsafe. Contact Answer Customer Service prior to modifying your fork in any way for safety information.
4. Do not use the SKAREB fork if any parts are broken, bent, cracked, or you suspect may be damaged. Contact your dealer or Answer Customer Service at (661) 257-4411 if you have any questions concerning the integrity or condition of your fork.
5. Answer Products recommends that you inspect your fork before every ride for wear and damage. Inspect the crown, inner legs, outer legs, dropout and brake arch areas for cracks or damage.

WARRANTY INFORMATION

Any Answer Products fork found by the factory to be defective in materials and/or workmanship within one year from the date of purchase (or two years in EU countries) will be repaired or replaced at the option of the manufacturer, free of charge, when received at the factory with proof of purchase, freight prepaid. This warranty does not cover breakage, bending, or damage that may result from crashes or falls. This warranty does not cover any fork that has been subject to misuse or whose serial number has been altered, defaced or removed. This warranty does not cover paint damage. Any modifications made by the user will render the warranty null and void. This warranty is expressly in lieu of all other warranties, and any implied are limited in duration to the same duration as the expressed warranty herein. Answer Products shall not be liable for any incidental or consequential damages.

If for any reason warranty work is necessary, return the fork to the place of purchase. At that time, instructions for repair, return, or replacement shall be given. Customers in countries other than USA should contact their dealer or local distributor.

INSTALLATION INSTRUCTIONS

Ensure that the proper steerer tube has been delivered on your SKAREB first. The steerer tube may need to be cut to length to fit your bicycle head tube. If you are not familiar with this procedure, or do not have the proper tools to cut the steerer tube, it is recommended that you seek a dealer with a qualified bicycle mechanic to perform installation.

⚠ WARNING THE STEERER TUBE AND STANCHIONS (INNER LEGS) ARE A ONE-TIME PRECISION PRESS FIT AT THE FACTORY AND CANNOT BE REMOVED FROM THE CROWN. REPLACEMENT OF THE ENTIRE CROWN/STEERER ASSEMBLY MUST BE DONE TO CHANGE STEERER TUBE LENGTHS OR DIAMETERS. REMOVING AND REPLACING THE STEERER TUBE OR STANCHIONS WILL RESULT IN AN UNSAFE CONDITION AND SHOULD NEVER BE DONE.

BREAK-IN

Your new fork is designed to break in during your first few rides (about 20 hours total riding time). Prior to break-in, you may notice your fork feels tight and slightly notchy. Following the break-in period, your fork will feel much smoother and will react to bumps much better than when you first put it on your bike. After 20 hours, you may want to recheck your compression, rebound and preload adjustments (when applicable) to fine tune the fork completely.

FORK INSTALLATION

1. Remove the old fork from your bicycle.
2. Measure and cut the steerer tube to fit your bicycle head tube. You can use your old fork as a guide for cutting the steerer tube length.
3. Remove the headset crown race from the old fork and press onto the SKAREB steerer until the race is seated over the crown.
4. Clean and grease the headset bearings and races.
5. Install the lower bearings (if applicable) on fork crown race.
6. Insert the steerer tube into the head tube of the frame.
7. Install the upper bearings, stem spacers, and stem.
8. Install the stem cap and bolt. Tighten the bolt to headset manufacturer's specifications.
9. Install the handlebars to the desired height and the torque stem pinch screws or stem clamping system to manufacturer's specifications.
10. Install the brakes and adjust per the manufacturer's instructions.
11. Adjust the front wheel quick release to clear the 0.335" (8.5 mm) thick secondary catch dropout. The quick release must be tightened after it is properly seated into the dropout counter bores to manufacturer's specifications. Ensure that there is adequate thread engagement (4 or more threads with the release adjusted to lock).
12. Install the brake cable per manufacturer's instructions.

NOTE: 2003 SKAREB forks are equipped with a secondary catch dropout to retain the wheel in the fork in the event the quick release comes loose.

WARNING **WHEN INSTALLING THE WHEEL OR A NEW TIRE, CHECK TO MAKE SURE THE FORK ACHIEVES MINIMUM TIRE CLEARANCE. MEASURE FROM THE HIGHEST POINT ON THE TIRE TO THE BOTTOM OF THE BRAKE ARCH. THIS MEASUREMENT SHOULD BE AT LEAST 10 MM. (FIGURE 1)**

IMPORTANT: The SKAREB fork should not be used if any parts appear to be or are damaged. Contact your local dealer or Answer Products for replacement parts.

MAINTENANCE

Your SKAREB fork requires periodic maintenance, cleaning and inspection. This is because moisture and contamination may build up inside the fork depending on the severity of riding conditions. To maintain top performance, it is recommended that the fork be periodically disassembled, cleaned, dried and relubricated.

IMPORTANT: Before every ride you should:

1. **Ensure that quick release skewers are properly adjusted and tight.**
2. **Wipe the inner legs and clean and check the entire fork for any obvious damage.**
3. **Check the headset for proper adjustment.**
4. **Ensure that the front brake cable is properly routed and check brake adjustment.**

CHECKING OIL LEVEL

IMPORTANT: Setting the proper oil level in your TPC-equipped fork is critical. TPC is located in the right leg of your SKAREB fork. Not enough oil will allow foaming and reduce the performance. Too much oil will restrict travel and may cause damage to the system and create an unsafe riding condition. Finish reading this entire section prior to altering the oil level.

To check the oil level on a Manitou SKAREB fork, remove the compression assembly located in the top of the right leg (as you are looking at the fork from the rider's position). Leave the left side spring stack in place to keep the fork fully extended. Use a tape measure or "dip stick" to measure from the top of the fork crown down to where the oil sits (Figure 2). The oil level for the Manitou SKAREB should be per the following table.

FORK MODEL	OIL LEVEL
SKAREB COMP COIL	115 mm - 125 mm (4.5-4.9 inches)
SKAREB ELITE	115 mm - 125 mm (4.5-4.9 inches)
SKAREB SUPER	105 mm - 110 mm (4.1-4.3 inches)
SKAREB DIVA	105 mm - 110 mm (4.1-4.3 inches)

NOTE: Use SAE 5WT fork oil suspension fluid only.

If you have any questions regarding your 2003 Manitou SKAREB suspension fork, contact Answer Customer Service at (661) 257-4411. You can also log on to www.answerproducts.com and download this manual or see detailed instructions on how to service your suspension fork.

Thank you again for choosing a 2003 Manitou SKAREB suspension fork.

DEALER SERVICE ADDENDUM

This section is designed to help a qualified bicycle mechanic tune and maintain your Manitou suspension fork.

MEASURING SAG You'll need a tape measure, a pencil and a piece of paper.

1. Measure the distance from the front axle's centerline to the bottom of the upper crown when no one's sitting on the bike and write this distance down. (Remember the exact locations of the two points because you'll need to use them later.)
2. Have the rider sit on the bike and measure the distance between the same two points as in step one. It's important to be in the normal riding position (weight centered) with your feet on the pedals.
3. Subtract the second measurement from the first. The resulting measurement is the static sag.

SAG MEASUREMENT CHART

Fork Travel	Sag
80 mm	12-16 mm

RIDE KITS

SKAREB COMP COIL

Rider Weight	Recommended Ride Kits	Part #
100-150 lbs.	Soft ride kit	85-5041
150-170 lbs.	Medium ride kit	85-5042
170-190 lbs.	Firm ride kit	85-5043
190 plus lbs.	Extra firm ride kit	85-5173

SKAREB ELITE/SUPER/DIVA

Rider Weight	Recommended Ride Kits	Part #
100-125 lbs.	X-Soft ride kit	85-4808
125-150 lbs.	Soft ride kit	85-4878
150-190 lbs.	Medium ride kit	85-4927
190 plus lbs.	Firm ride kit	85-9188

* Air pressure setting should equal 75% of body weight.

* Maximum air pressure is 190 psi.

CHANGING COIL SPRINGS – SKAREB COMP COIL

1. Start by removing the preload adjuster by removing the knob with a 2 mm hex wrench (Figure 3), then unscrewing the assembly from the top of the crown/leg assembly. A 20 mm socket may be necessary (Figure 4). Remember: The springs are housed only in the left leg on 2003 Manitou suspension forks.
2. With the adjuster assembly removed, the spring stack is now accessible. (Figure 5)
3. Select the appropriate ride kit for the rider's weight and riding style (refer to the above spring chart for recommended rates).
4. Reinstall the preload adjuster assembly and knob, taking care not to cross-thread the assembly. It should thread in by hand and does not need to be tightened with a wrench (finger-snug is recommended).

CHANGING COIL SPRINGS – SKAREB ELITE, SKAREB SUPER, SKAREB DIVA

1. Read section on Semibath Lubrication Maintenance first. Unthread the air cap on top of the left fork leg and release the fork's air pressure via the Schraeder valve. (Figure 6)
2. From the bottom of the casting remove the 2 mm cap screws and caps (Figure 7), screw in the 8 mm rod (turn clockwise to loosen) and the 4 mm bolt from the bottom of the casting (Figure 8). Once you do this, you will be able to pull the lowers away from the uppers. (Figure 9)
3. On the left leg (as seen from the rider's perspective), remove the 15/16-inch cap from the bottom of the leg. Remove the entire assembly by pulling the rod lightly. As this point, you will see the coil spring. (Figure 10)
4. Select the appropriate coil spring for the rider's weight and riding style (refer to the above spring chart for recommended rates).
5. Reinstall the assembly into the left leg of the fork, taking care not to cross-thread the cap. It should thread in by hand and should only be snug tightened. (Figure 11)
6. Reinstall the lowers with the 8 mm and 4 mm bolts and tighten. You may have trouble getting the 8 mm bolt to catch the threads. If this occurs, remove the lowers and pull the rebound damping rod again, and reinstall the casting. You should now be able to install the 8 mm bolt. Reinstall the caps and 2 mm bolts. (Figure 8 and 12)

CHANGING AIR SPRING PRESSURE – SKAREB ELITE, SKAREB SUPER, SKAREB DIVA

All you need to change the air pressure is a high-pressure Manitou (Manitou part #85-4069) or other shock pump. Remove the air cap located on the top of the left leg, and then inflate the fork with the desired pressure. Be aware that sometimes air systems lose a small amount of pressure when the pump is removed, so you may want to check exactly how much your pump loses by reinstalling it on the fork after you have set and checked the pressure.

AIR PISTON LUBRICATION For proper function of your fork, it is essential to have a small amount of lubricating oil on top of the air piston in your SKAREB Elite, Super or Diva fork. To check this, remove the air cap on the left side of the fork (as seen from the rider's perspective) by simply unthreading it counterclockwise. Release the air pressure from the fork and then use a 20 mm hex wrench to remove the aluminum Schraeder cap. Once you have done this, you can see the top of the air piston and determine if there is a small amount of oil sitting on top of the air piston. If this oil is no longer visible, pour 8cc of 20W-50 motor oil directly into the open fork leg (Figure 13). After this, reinstall the Schraeder cap and the air cap, and pressurize.

COMPRESSION DAMPING ADJUSTMENT – QUICK RANGE TPC

For Quick Range TPC forks, a simple turn of the knob located on top of the right leg is all that is needed. Turning the knob clockwise (as you are looking from a rider's position) increases compression damping, while turning it counterclockwise decreases compression damping.

ADJUSTING COMPRESSION DAMPING WITH A LOCK OUT

The Lock Out is simply an on-off switch for your fork. To adjust compression damping, do the following: Remove the compression assembly located in the right leg. On the lower piston of the lockout assembly is a small setscrew. Turn this in or out to increase or decrease compression damping respectively. Note: a half turn makes a lot of difference, so make small and incremental changes to the setscrew.

REBOUND DAMPING ADJUSTMENT – QUICK RANGE TPC & FLUID FLOW

Rebound adjusters on Manitou forks are located on the bottom of the right fork leg. Turning the knob clockwise (as you are looking at the fork from the bottom) increases rebound damping, while turning it counterclockwise decreases rebound damping.

MAINTENANCE AND SERVICE – INTRODUCTION

When servicing the fork, take the time to inspect all parts for excessive wear or damage. There are basically five aspects of a fork that will require attention: the stanchions (inner legs), the bushings in the outer legs, the spring stack, the lubricating oil, and the damping fluid. In addition, with air spring forks, you

will also need to make sure a small amount of lubricating oil (8cc) in sitting on top of the air piston (see Air Piston Lubrication above). Inspecting any of these parts requires disassembly of the fork. Pay close attention to the bushings, which can be damaged by contamination in severe conditions. Replace any worn or damaged parts that are discovered.

SEMIBATH LUBRICATION MAINTENANCE

Your 2003 Manitou SKAREB fork is designed with a Semibath lubrication system. This system requires periodic maintenance to ensure that your fork is working properly at all times. To service the Semibath system, do this:

1. Remove the rebound damping knob with a 2 mm Allen wrench. (Figure 12)

2. With the fork positioned over an oil catch receptacle, use an 8 mm Allen wrench to screw the rod located under the damping knob into the fork (clockwise). This will unthread the rod from the casting. Next, remove the 4 mm Allen bolt from the bottom of the fork (Figure 8). You now may notice some oil draining out of the bottom of the fork.

3. Pull the fork apart, holding the fork away from you and letting the oil drain out of the bottom of the fork. (Figure 9)

4. Clean the inside of the lowers thoroughly and wipe the inner legs until they are completely free of oil or debris. (Figure 19)

5. Pour lubricating oil into the fork before you reassemble it. Pour 15cc of oil into each side of the lowers while you hold the assembly horizontally. A syringe is recommended for this. (Figure 14)

6. Holding the fork horizontally, insert the crown/steerer assembly back into the fork. Reinstall the bolts to 10 - 30 in-lbs., and install the rebound adjuster knob. (Figure 8)

CHANGING THE OIL IN YOUR FORK Changing the oil in your damped fork is very easy to do. All of the damping systems, FFD, TPC and TPC Plus, house the oil in the right leg.

1. Remove the adjuster knob and loosen the assembly from the top of the right fork leg (20 mm socket). (Figure 15)

2. Rock the compression damping assembly back and forth slightly as you pull up on it to remove it. (Figure 16)

3. Pour the old oil out of the fork. (Figure 17)

4. Stroke the fork up and down to remove the oil that settles beneath the rebound piston. Pour this oil out as well.

5. Add oil to the level shown in the Checking Oil Level section of this manual (Figure 18). Make sure you stroke the fork up and down a few times before the final measurement is taken to ensure that oil has flowed beneath the rebound piston again. (Figure 2)

SERVICE SCHEDULE – Suggested Service for Manitou forks

NORMAL CONDITIONS – Short/Infrequent Rides
- Disassemble, clean and lubricate fork every 6 months.
- Service TPC or FFD by changing fork fluid every year.

NORMAL CONDITIONS – Long/Frequent Rides
- Disassemble, clean and lubricate fork every 4 months.
- Service TPC or FFD by changing fork fluid every 6 months.

SEVERE CONDITIONS – Short/Infrequent Rides
- Disassemble, clean and lubricate fork every 4 months.
- Service TPC or FFD by changing fork fluid every year.

SEVERE CONDITIONS – Long/Frequent Rides
- Disassemble, clean and lubricate fork every 2 months.
- Service TPC or FFD by changing fork fluid every 6 months.